# Data Handling for Minos

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## Introduction: Flow of events

1. Event Rates (from DAQ)

   Near **100 Kbytes/second** assuming 0.8Kbytes/event

   Far **2.4 Kbytes/second** assuming 2.4 Kbyes/event

2. DAQ will generate ROOT files on the local disks on both sites.

3. These ROOT files will be transferred to FCC over the network.

4. At FCC, these files will be written to tape for archival.

# Data Archival

- Data will be send to FCC using locally developed software (FNAL+Northwestern) with FTP protocol.
- The receiving end can either be again locally developed software (current implementation) or FNAL *disk-cache* software.
- When there is enough data, data will be written to tape using FNAL product *Enstore*.
- Different Data types (Calib., Cosmics etc..) will be stored on different tapes seen as different directories via FNAL/DESY tool *PNFS*.

- On top of Enstore/PNFS utilities, there will be Minos specific command line or programming tools for accessing files on tape.
- On site data storage options *Local Tape (DLT?), cdrom..* and buffering against network or FCC tape failures are being considered.
- In case of FNAL *disk-cache* software, Near detector can directly dump to the FCC cache.

## Prototype Design

- Maximal usage of existing (Fnal) products.
- Everything should be **web** based: Control, Monitoring, Tuning, Queries..
- "Ready" Files are **pushed** from detector sites to Pool Manager (FCC).
- Based on a user criteria, (file size, number..) data should go from disc cache to tape.

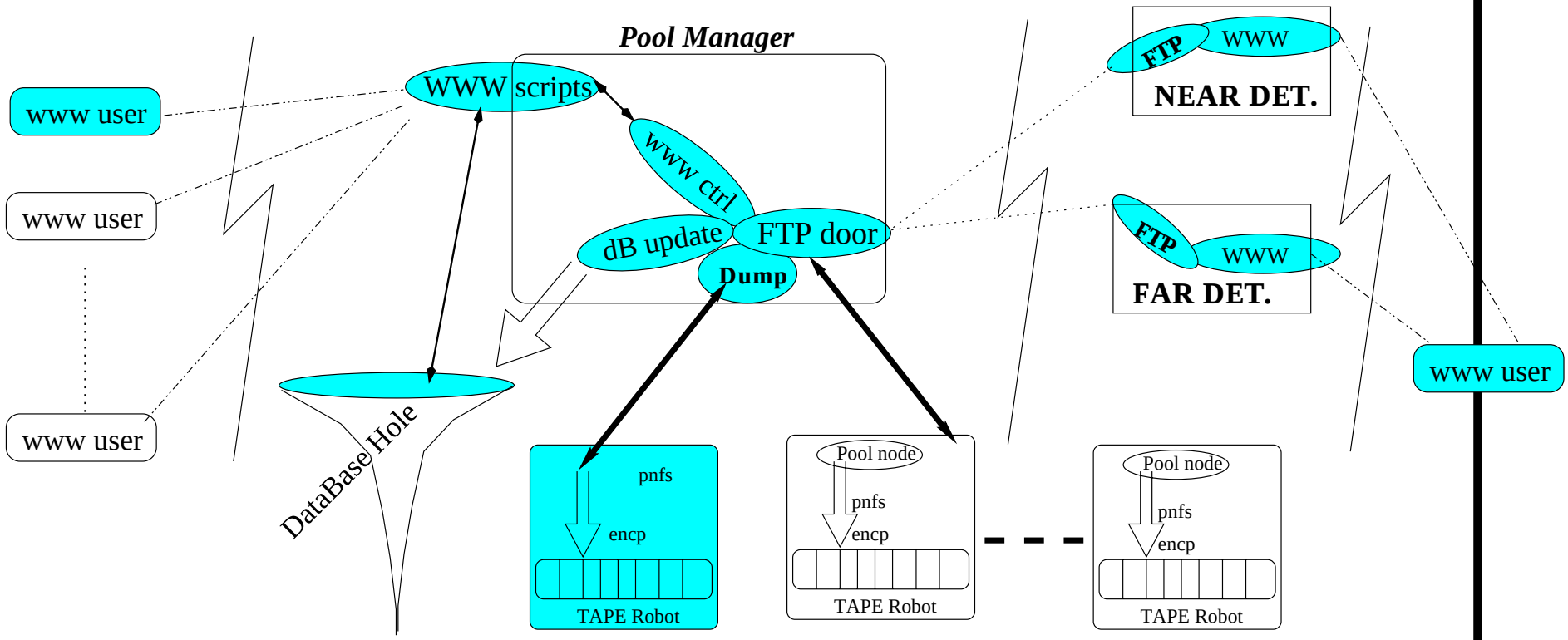
## Prototype Implementation

- Python based implementation on Linux (FNAL 6.1) for transport scripts.
- Control, Monitoring and Queries as CGI programs again in python.
- MySQL, Apache, Netscape as utility tools.

- Files of Random properties(size, type, run..) are generated by a dispatcher emulator.
- Emulator and FTP script handshake via a MAILBOX using system lock functions.

- Since FNAL disc cache SW is not *yet* available, a home-brew version is used.

**Don't miss the Demo!!!**




**Data Transfer Scheme Prototype v1.0**

## Future Plans

- Sort out yet unresolved issues: DCS, Monitoring, Handshake, File Deletion..
- Comments and User input
- Incorporate the FNAL Disc Cache software
- Extensive testing..